

WHAT IS CLAIMED IS:

1. A purified polypeptide comprising an amino acid sequence that is at least 80% identical to the amino acid sequence of SEQ ID NO: 3, 10, 11 or 12.
- 5 2. The purified polypeptide of claim 1, wherein the amino acid sequence is at least 90% identical to the amino acid sequence of SEQ ID NO: 3, 10, 11 or 12.
3. The purified polypeptide of claim 2, wherein the amino acid sequence is at least 95% identical to the amino acid sequence of SEQ ID NO: 3, 10, 11 or 12.
- 10 4. A purified polypeptide comprising the amino acid sequence of SEQ ID NO: 3, 10, 11 or 12.
5. A purified polypeptide comprising an amino acid sequence that is at least 80% identical to the amino acid sequence of SEQ ID NO: 4.
- 15 6. The purified polypeptide of claim 5, wherein the amino acid sequence is at least 90% identical to the amino acid sequence of SEQ ID NO: 4.
7. The purified polypeptide of claim 6, wherein the amino acid sequence is at least 95% identical to the amino acid sequence of SEQ ID NO: 4.
8. A purified polypeptide comprising the amino acid sequence of SEQ ID NO: 4.
9. An isolated nucleic acid encoding the polypeptide of claim 4.
- 20 10. An isolated nucleic acid encoding the polypeptide of claim 8.
11. An isolated nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO: 5, 13, 14 or 15.

12. An isolated nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO: 6.

13. The isolated nucleic acid of claim 9, further comprising an operably linked heterologous promoter.

5 14. The isolated nucleic acid of claim 10, further comprising an operably linked heterologous promoter.

15. A method comprising:

(a) providing a polypeptide comprising the amino acid sequence of SEQ ID NO:3, 10, 11 or 12;

10 (b) contacting a test compound to the polypeptide; and

(c) measuring the binding of the test compound to the polypeptide.

16. A method comprising:

(a) providing a polypeptide comprising the amino acid sequence of SEQ ID NO:4;

15 (b) contacting a test compound to the polypeptide; and

(c) measuring the binding of the test compound to the polypeptide.

17. The method of claim 15, further comprising measuring PANZP activity of the polypeptide.

20 18. The method of claim 16, further comprising measuring PANZP activity of the polypeptide.

19. The method of claim 15, further comprising:
(a) providing a second polypeptide, wherein the polypeptide comprises the amino acid sequence of a mammalian PAN containing polypeptide;
(b) contacting the test compound to the second polypeptide; and
5 (c) measuring the binding of the test compound to the second polypeptide.

20. The method of claim 16, further comprising:
(a) providing a second polypeptide, wherein the polypeptide comprises the amino acid sequence of a mammalian PAN containing polypeptide;
(b) contacting the test compound to the second polypeptide; and
10 (c) measuring the binding of the test compound to the second polypeptide.

21. A method comprising:
(a) providing a polypeptide comprising the amino acid sequence of SEQ ID NO:3, 10, 11 or 12;
(b) contacting a test compound to the polypeptide; and
15 (c) measuring an PANZP activity of the polypeptide, wherein a change in PANZP activity relative to the PANZP activity of the polypeptide in the absence of the test compound is an indication that the test compound alters the activity of the polypeptide.

22. A method comprising:
20 (a) providing a polypeptide comprising the amino acid sequence of SEQ ID NO:4;
(b) contacting a test compound to the polypeptide; and
(c) measuring an PANZP activity of the polypeptide, wherein a change in PANZP activity relative to the PANZP activity of the polypeptide in the absence of the test
25 compound is an indication that the test compound alters the activity of the polypeptide.

23. The method of claim 21, further comprising the steps of:

(a) providing a second polypeptide, wherein the second polypeptide comprises the amino acid sequence of a mammalian PAN containing polypeptide;

(b) contacting the test compound to the second polypeptide; and

5 (c) measuring the activity of the second polypeptide.

24. The method of claim 22, further comprising the steps of:

(a) providing a second polypeptide, wherein the second polypeptide comprises the amino acid sequence of a mammalian PAN containing polypeptide;

(b) contacting the test compound to the second polypeptide; and

10 (c) measuring the activity of the second polypeptide.

25. An antibody that binds specifically to a polypeptide consisting of SEQ ID NO: 3, 10, 11 or 12.

26. An antibody that binds specifically to a polypeptide consisting of SEQ ID NO: 4.

15 27. An isolated nucleic acid molecule that hybridizes under high stringency conditions a nucleic acid molecule consisting of SEQ ID NO: 1, 7, 8 or 9.

28. An isolated nucleic acid molecule that hybridizes under high stringency conditions a nucleic acid molecule consisting of SEQ ID NO: 2.

20 29. A method for eliciting an immune response to a nematode in a mammal, the method comprising administering to the mammal a composition comprising an immunogenic peptide comprising at least 10 contiguous amino acids of SEQ ID NO: 3, 10, 11, 12 or SEQ ID NO: 4.